REMARKS

Status of the Claims

Claims 1, 2, 4 and 12-21 are pending.

Claims 3 and 22-24 have been cancelled.

Claims 5-11 were subject to a restriction requirement and have been cancelled in a previous amendment.

Claim 1 has been amended to recite the following structural limitations:

- the porous body of the electroconductive gas diffusion layer comprises a plurality of pores. Antecedent basis for this limitation can be found on page 13, line 17. This limitation provides antecedent basis for the recitation of "the pores" on line 13 of claim 1.

- the at least one landing surface is formed on the first surface of the electroconductive separator plate. Antecedent basis for this amendment can be found in Fig. 3; and

- a plurality of welds spaced along the first surface of the electroconductive gas diffusion layer. Antecedent basis for this amendment can also be found on page 13, line 24, and in Fig. 3,

- that the first surface of the gas diffusion layer is joined to the separator plate by the welds. Antecedent basis for this amendment can be found on page 13, line 24 and in Fig.3

- and that the welds are formed by localized impregnation of some of the thermoplastic polymer of the landing surface within the pores of the porous body. Antecedent basis for this amendment can be found on page 13, lines 10 – 24, generally, and in Fig.3

Claim 2 has been amended to recite that the welds are formed and the welds are formed in between the open flow field channels. Support is found in the specification at page 13, line 24 and in Fig. 3.

Claim Rejections: 35 USC § 103(a)

In [3] of the Office Action, claims 1-4, 14-21 and 24 were rejected under 35 USC § 103(a) as being unpatentable over Davis et al. (GB 2 326 017A hereinafter Davis) in view of Sugita et al. (U.S. patent 6,455,179 hereinafter Sugita). Examiner asserts that it would have been obvious for one of ordinary skill in the art to include a gas diffusion electrode of Sugita to the porous electrode of Davis because this would ensure an efficient entry passage for the gases.

Amended claim 1 recites the structural features of the electrochemical cell component. Specifically claim 2 recites a plurality of welds spaced along a first surface of the electroconductive gas diffusion layer, wherein the first surface of the gas diffusion layer is joined to the separator plate by the welds, and that the welds are formed by localized impregnation of some of the thermoplastic polymer of the landing surface within the pores of the porous body of the electroconductive gas diffusion layer.

Davis does not disclose or describe the structural features as recited independent claim 1 and the claims dependent therefrom. First, Davis does not disclose a gas diffusion layer (GDL). Further, Davis does not disclose *welds that are spaced along a first surface of the electroconductive gas diffusion layer, wherein the first surface of the gas diffusion layer is joined to the separator plate by the welds, and that the welds are formed by localized impregnation of some of the thermoplastic polymer of the landing surface within the pores of the porous body of the electroconductive gas diffusion layer*. What is stated in Davis at page 6, lines 14-28, and is heat lamination of the landing surface to the cathode and anode electrodes. Applicants submit that heat lamination of Davis, provides for the entire separator plate to be adhered to the MEA electrode, either directly or by way of an adhesive layer inserted between the separator plates and the electrode. There are no welds in Davis as recited in claim 1 which are spaced along the surface of a gas diffusion layer which abuts a separator plate. Further, a skilled artisan would appreciate that Davis's heat lamination approach using pressure and heat will form *insulative* adhesive polymer layers and not the localized impregnated pores that provide for maintaining electrical contact with the GDL. Thus, Applicants submits Davis teaches

away from the structural features as recited in Claim 1, and claims dependent therefrom.

There is absolutely no discussion throughout Sugita about structural features as recited in claim 1. As disclosed in Sugita at col. lines 27-31, the fuel stacks are integrally tightened using a spring mechanism. Towards this end surface pressure is applied by a non compressive fluid such as silicone oil is to ensure contact with the end plate. As depicted in Figure 7, application of surface pressure is to maintain substantial contact with the stacked plates and the GDL and this is done by using a spring mechanism. Thus, Applicants submit that *welds that are spaced along a first surface of the electroconductive gas diffusion layer, and that are formed by localized impregnation of some of the thermoplastic polymer of the landing surface within the pores of the porous body of the electroconductive gas diffusion layer*, are not disclosed in Sugita. Further, Sugita does not recognize the desired electrical contact brought about by localized impregnation. Accordingly, Applicants submit that the combination of Davis and Sugita would not have rendered obvious the presently claimed invention as asserted by the Examiner.

With regard to claims 2 and 3, the Examiner states that local heating techniques selected from resistance welding, vibrational welding, ultrasonic welding and laser welding are product by process limitations which are not patentable.

Claim 3 has been cancelled. Claim 2 has been amended to recite only structural limitations of the electrochemical cell component and particularly states that the landing surfaces separated by open flow field channels, and the welds are formed in between the channels.

Accordingly removal of the rejection and allowance of claims 1,2,4 and 14-21 is respectfully requested.

In [4] of the Office Action, claims 12 and 13 were rejected as being unpatentable under 35 USC § 103(a) over Davis in view of Sugita as applied to claim 1, and further in view of Takagi et al., (U.S. patent 7,008,991 hereinafter Takagi). The Examiner asserts that it would be obvious for a person skilled in the art to optimize the percentages of maleic anhydride polymer and liquid crystalline polymer of Takagi

through routine experimentation as the weight percentages as recited is a results effective variable.

For the reasons discussed hereinabove the combination of Davis and Sugita would not have rendered obvious the independent claim 1 and claims 12 and 13 that are dependent from claim 1. Takagi fails to cure the deficiencies of Davis and Sugita, in that it does not disclose *welds that are spaced along a first surface of the electroconductive gas diffusion layer, wherein the first surface of the gas diffusion layer is joined to the separator plate by the welds, and that the welds are formed by localized impregnation of some of the thermoplastic polymer of the landing surface within the pores of the porous body of the electroconductive gas diffusion layer.* Accordingly removal of the rejection and allowance of claims 12 and 13 is respectfully requested.

In [5] of the Office Action, claims 22-23 were rejected as being unpatentable under 35 USC § 103(a) over Davis in view of Sugita and Takagi.

Claims 22 and 23 have been cancelled thus obviating this rejection.

In view of the foregoing, allowance of claims 1,2,4 and 12-21 the above-referenced application is respectfully requested.

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